Clemas & Co Ltd
Industrial Cleaning Equipment
Sales - Hire - Service

ORBIS SCRUBBER POLISHER RANGE OPERATOR MANUAL

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Clemas & Co Ltd
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ORBIS 200 & 400 SCRUBBER POLISHER OPERATOR MANUAL

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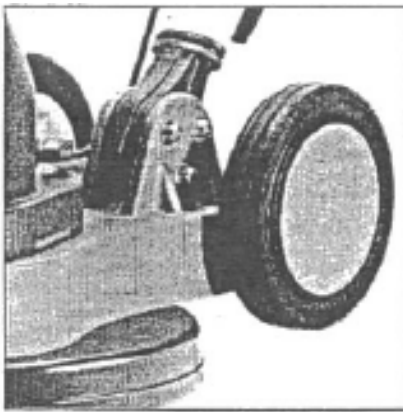

Fig. 1

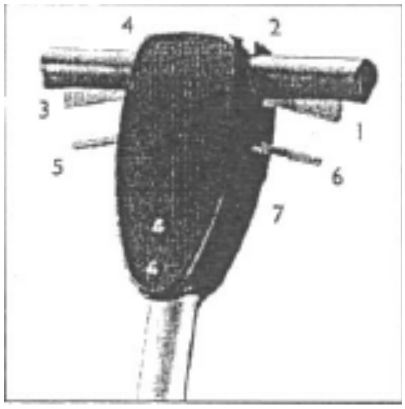

Fig. 2

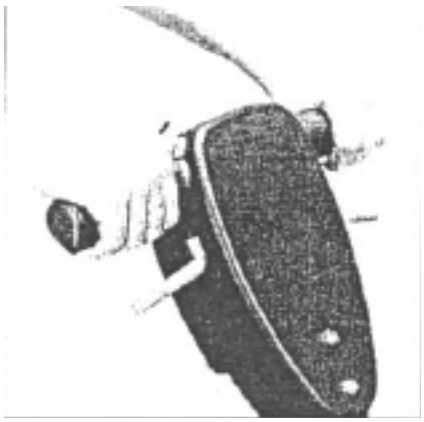

Fig. 3

Fig.4

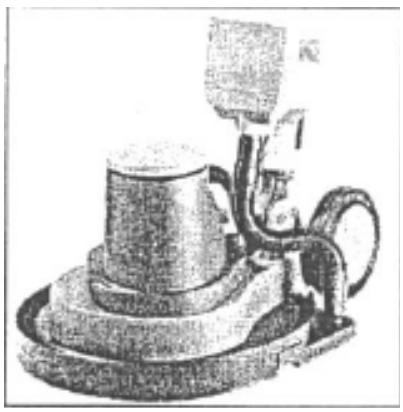

Fig. 5

Contents

Page

1 General Information 5
- 1.1 Important safety advice 5
- 1.2 Guidelines for the operator 5
- 1.3 Transporting the machine 5
- 1.4 Electrical connection 5

2 Preparing for use 6
- 2.1 Fitting the handle 6
- 2.2 Fitting the dust bag 6

3 Controls 6
- 3.1 Fitting a brush or drive disc 6
- 3.2 Adjusting the handle height 6

4 Operation 6
- 4.1 Starting the machine 6
- 4.2 Model 452/400 dual speed 7
- 4.3 Polishing 7
- 4.4 Scrubbing and shampooing 7
- 4.5 Fitting the solution tank 7
- 4.6 Removing the solution tank 7
- 4.7 The vacuum unit 7
- 4.8 Fitting the vacuum skirt 7
- 4.9 Fitting the vacuum unit 8
- 4.10 Using the vacuum unit 8

5 Storage 8

6 Maintenance 8

7 After sales service 8

8 Guarantee 8

9 Technical specification 9

10 Accessories 10

11 Fault diagnosis 11

IMPORTANT
READ THESE INSTRUCTIONS CAREFULLY AND RETAIN FOR FUTURE REFERENCE

1 General Information

These floor cleaning machines are designed for the scrubbing and polishing of hard floors and/or shampooing of carpets in indoor areas. They should not be used in outdoor areas or where excessive moisture is present.

The following instructions contain important information about the machines and safety advice for the operator.

NOTE - To protect the machine from possible damage during transit, the machine base and handle are packed seperately. Ensure that both items are present and follow the simple assembly instructions to bring the machine into service.

Equipment must be operated, serviced and maintained in accordance with the manufacturer's instructions.

If in doubt contact the supplier of your machine.

These instructions are valid for the following models.

Orbis – OB45200, OB45400, OB452/400

1.1 Important Safety Advice

When using electrical equipment basic safety precautions should be followed including the following.

- Read all instructions carefully before use.
- Keep children and unauthorised persons away from the machine when in use.
- **Do not** leave the machine connected to the electricity supply when not in use, always remove the plug from the socket-outlet.
- Switch off the machine before removing the plug.
- When unplugging pull the plug, not the supply cord.
- Keep the power supply cord clear of moving parts. During operation hazard may occur when running the machine over the power supply cord.
- **Do not** operate the machine with a damaged supply cord or plug, or after the machine malfunctions or is damaged in any way. Contact an authorised Service Agent for repair or adjustment.
- The plug of the power supply cord must be removed from the socket-outlet before commencing cleaning of the machine or undertaking maintenance operations.
- The power supply cord is to be regularly inspected for signs of damage. If the power supply cord is damaged, it has to be replaced.
- **Do not** use where hazardous dust is present.
- **Do not** use in an explosive atmosphere.
- Take care when using a machine near the top of stairs to avoid overbalancing.

1.2 Guidelines for the operator

- Operators must be fully trained in the use of the machine in accordance with these instructions, able to perform user maintenance and the correct selection of accessories, i.e. brushes and pads etc.
- Operators should be physically capable to manoeuvre, transport and operate the machines.
- Operators should be able to recognise unusual operation of the machine and report any problems.
- Let the machine do the work. Grip the handle as lightly as possible.
- Stand with feet slightly apart to maintain good balance. Avoid twisting the body more than 45 degrees.
- Wear suitable footwear to avoid slipping.
- Wear suitable clothing to keep dry and warm.
- Where possible implement job rotation and adequate rest periods to avoid continuous use of the same muscles.
- **Do not** smoke when using the machine.
- **CAUTION** - This machine is for dry use only and should not be used or stored outdoors in wet conditions.

1.3 Transporting the machine

CAUTION - THIS MACHINE IS HEAVY
Do not attempt to lift the machine without assistance. Incorrect lifting techniques may result in personal injury.

When transporting the machine the handle should be locked in the upright position.

1.4 Electrical connection

Before connecting the machine to the power supply, check that your supply voltage corresponds with that marked on the rating label on the handle of the machine.

The supply cord is fitted with a non-rewireable plug containing a 13 amp fuse. Should the fuse require replacement it must only be replaced by a 13 amp fuse conforming to BS1362, and the fuse cover **must** be refitted. If the fuse cover is lost the plug **must not** be used until the correct replacement cover is fitted.

IMPORTANT - If the supply cord is damaged, it must only be replaced by a special cord available from the manufacturer or an authorised service agent.

WARNING -THIS APPLIANCE MUST BE EARTHED

2 Preparing for use

2.1 Fitting the handle

1. Carefully remove the machine base and handle from their respective packaging.
2. Check that the following items are present with the base and remove them from their transit position.
   M8 x 70 Hex.Hd. bolt (3)
   M8 Nyloc Hex. nut (3)
   M8 Plain washer (6)
   13mm A/F Spanner (2)
3. Take handle and check that 'O' rings on either side of the knuckle pivot are seated in their grooves, and that the datum mark on the pivot gear is aligned with the handle tube. If this is not the case, raise the handle adjustment lever and rotate the pivot gear until the datum mark is in line with the handle tube, and release the adjustment lever.
4. With the handle held vertically and cable winder to the rear, lower pivot between the raised flanges on the machine base.
5. Align holes in pivot with those on base and fit the three M8 bolts, washers and nuts, and tighten using the spanners supplied (Fig.1).
6. Connect supply lead from handle to socket on motor housing.

3 Controls

The operating controls for all models are located on the handle (Fig. 2).

1 - Switch trigger, left hand

Used to switch motor ON and OFF. Can only be operated with handle in working position, and if left hand interlock button (2) has previously been depressed.

2 - Interlock button, left hand

This must be depressed initially to enable left hand switch trigger to switch motor on.

3 - Switch trigger, right hand

Used to switch motor ON and OFF. Can only be operated with handle in working position, and if right hand interlock button (4) has previously been depressed.

4 - Interlock button, right hand

This must be depressed initially to enable right hand switch trigger to switch motor on.

5 - Handle adjustment lever

Used to adjust handle to comfortable working height. Note for safety reasons the machine cannot be operated unless the handle is moved to a working height.

6 - Solution feed lever

Operates flow valve in solution tank (if fitted).

- Pull lever to release solution.

- Release lever to stop flow.

7 - Socket connector

Connection point for vacuum unit lead.

Drive plate

Attachment point for brush or drive disc and pad.

Cable winder

Used to hold supply cord in place on handle when machine is not in use. Can be turned to enable quick release of cord.

Motor overload cut-out

Protects motor from overload and possible damage. The cut-out will reset automatically when cooled sufficiently, enabling the motor to restart.

Neon indicator (on handle)

Lights when the machine is connected to the power supply.

3.1 Fitting a brush or drive disc

Always ensure machine is unplugged before fitting or removing parts.

- Adjust handle to the fully upright position.
- Pull handle down until it rests on the floor and the brush guard is raised.
- Fit the brush/drive disc onto the drive plate and rotate it anti-clockwise until secure.
- Return machine to its normal upright position in readiness for starting.

3.2 Adjusting the handle height

Select the most comfortable handle height using the adjustment lever as previously described (see Controls) and lock in position.

4 Operation

The normal movement of a machine in use is from side to side across the floor. This is achieved automatically by raising or lowering the handle whilst it is engaged in the normal working position.

Lowering the handle thereby increasing the pressure at the rear of the brush/drive disc, moves the machine to the left. Raising the handle increasing the pressure on the front of the brush/drive disc moves the machine to the right.

Effective cleaning and polishing is achieved by moving the machine in a backwards direction.

Do not leave the machine standing on a brush or pad when not in use.

4.1 Starting the machine

- Fully unwind the supply cord from the handle and plug into a convenient socket outlet. The neon indicator on the handle should light showing that power is available.
- With the handle set at a convenient working height and with both left and right hands on the handle, depress both interlock buttons with the thumbs and squeeze both switch triggers to start the machine (Fig.3).

- Once the machine has started the interlock buttons should be released.
- To stop the machine release both switch triggers.

4.2 Orbis 452/400 dual speed
The speed selector switch on the dual speed model is located on the motor housing. Ensure machine is switched off before changing the speed setting.

4.3 Polishing
- Fit polishing brush or drive disc and pad suitable for the speed of the machine and the surface to be polished. (see **Accessories**).
- Apply polish to the floor in accordance with the manufacturers instructions.
- **Do not** keep the machine rotating on one spot for more than 3 seconds, as this could cause overheating and damage the floor surface.

4.4 Scrubbing and Shampooing
- For scrubbing or shampooing the solution tank must be fitted as described (see **Fitting the solution tank**).
- Fit a brush or drive disc and pad suitable for the surface to be cleaned. (see **Accessories**).
- **WARNING - This appliance has been designed for use with the brushes specified by the manufacturer. The fitting of other brushes may affect its safety.**
- Fill the solution tank with water and an appropriate measure of detergent.
- **IMPORTANT** - Use only cleaning agents suitable for automatic machines i.e. low foaming, and follow the chemical manufactuers' directions regarding use, handling, disposal and health and safety provisions.
- Before starting the machine release a liberal amount of cleaning solution from the tank to the floor. The flow of solution from the tank is controlled by moving the left hand lever. Releasing the lever stops the flow.
- Proceed to operate the machine in the normal manner, releasing more cleaning solution from time to time as required.
- **Do not** keep the machine rotating on one spot for more than 3 seconds, as this could cause overheating and damage the floor surface.
- Dirty water should not be allowed to accumulate on the floor, it should be removed to prevent dirt from settling. We suggest using a suction dryer for this purpose.
- When scrubbing/shampooing is complete, unplug the machine from the power supply, empty the solution tank and clean and dry the machine.
- **IMPORTANT** - Dispose of unused cleaning solution in accordance with the manufacturer's directions.

4.5 Fitting the solution tank
NOTE - The solution tank is supplied as an accessory item, complete with attachments and fitting instructions.
- Move the handle to the upright position and clamp the tank support bracket to the handle tube in the specified position (Fig.4). (Refer to the instructions supplied with the tank).
- Take the solution tank and pass the ring on the tank chain over the left hand operating lever and locate the ring in the inside slot on the top of the lever. Rest the solution tank on the support bracket with the handle tube in the groove on the back of the tank.
- To secure the tank in position, engage the locking bar on the back of the tank.
- Adjust the length of the chain by means of the screw and nut adjuster to ensure there is no tension on the chain when the flow control lever is not being used.
- Take the plastic tube supplied and push rigid end of tube into the connector on the underside of the solution tank, and the other end onto the tube at the rear of the motor housing. The tank connector is of the sealed lock-in type once the tube is connected. To release, press down on the orange collar of the connector with the finger tips and pull out tube.

4.6 Removing the solution tank
- Pull off plastic tube from machine base.
- Raise locking bar on back of tank.
- Lift off tank and detach chain ring from lever.

4.7 The vacuum unit
NOTE - The vacuum unit and vacuum skirt are supplied as accessory items, complete with attachments and fitting instructions.The vacuum unit combined with the vacuum skirt provides full dust control, eliminating the need to pre-dust or post dust the floor. The unit is designed to fit readily to all Orbis models.

IMPORTANT - The vacuum unit is NOT suitable for any form of wet cleaning.

4.8 Fitting the vacuum skirt
- Unplug and lay the machine down with the handlebar resting on the floor. Remove the brush or drive disc.
- Stretch and fit the rubber buffer around the brush guard.
- The flexible section of the skirt has a special spring sewn into the fabric. Fit this spring section into the groove in the rubber buffer.
- The spring is a reasonably tight fit to prevent accidental movement in use and therefore must be pulled onto the buffer by stretching.
- With the skirt on the buffer it can be moved in its groove to bring the hose connector to the rear, ensuring the base moulding lies in the cut-out

provided in the outer ring of the skirt, enabling free movement when in use (Fig.5).

4.9 Fitting the vacuum unit

- Stand machine upright, and clamp the vacuum unit support bracket to the handle tube in the specified position. (Refer to the instructions supplied with the unit).
- Rest the vacuum unit on the support bracket with the control switch to the rear, and engage the locking bar on the back of the unit to secure it in position.
- Push the flexible hose on to the vacuum unit and skirt.
- Plug the electrical lead from the vacuum unit into the socket situated on the left side of the handle moulding.
- The machine is now ready for use. The switch controlling the vacuum unit is located on the back of the unit. The OFF position is marked O.

4.10 Using the vacuum unit

IMPORTANT - For maximum suction the sliding shutter on the top of the unit must be closed.

- Dust collected by the unit is contained within the filter bag located behind the front cover.
- To replace the filter bag, switch off vacuum unit, release front cover catch and lift off cover.
- Remove and dispose of used bag. Fit new bag and replace front cover.

5. Storage

Always unplug and wipe down and dry the machine after use. The machine should normally be stored with the handle in the fully upright position.

Wrap supply cord around the handlebar and cable winder ensuring that the plug is not trailing on the floor. Store the machine in a dry indoor area only.

Never store the machine with a pad fitted as this causes distortion, and results in instability during operation.

6. Maintenance

WARNING - Before undertaking maintenance operations or adjustments switch off machine and unplug from the electricity supply.

The machine requires minimum maintenance apart from the following checks by the operator.

- **Supply cord** - Regularly inspect sheath, plug and cord anchorage for damage or loose connection.
- **Solution tank** - Check water flow, if restricted inspect hoses and tubes for blockage or kinks. Dismantle control valve to clean if necessary. Check switch interlock for correct operation.
- **Vacuum unit** - All dust bags must be changed regularly and hoses and connectors checked for blockage to avoid unsatisfactory results.
- **Motor overload cut-out** - All machines are fitted with an automatic reset motor overload cut-out. The cut-out will operate to protect the motor from overheating by switching the machine off when there is excessive friction/resistance to the cleaning head on the floor. This is usually caused by the stickiness of the pad or floor. Turn the cleaning pad over or if both sides are dirty replace with a clean pad. It is not possible to obtain a good finish on the floor using a dirty pad. Should the cut-out operate it will reset automatically when the motor has cooled sufficiently, usually after 15 - 30 mins.

IMPORTANT - Should the machine fail to operate contact the supplier from whom you purchased the machine.

7 After sales service

Should you require after sales service please contact the supplier from whom you purchased the machine,who will arrange service. Repairs and servicing of Truvox products should only be performed by trained staff. Improper repairs can cause considerable dangers to the user.

8 Guarantee

Your product is guaranteed for two years from the date of purchase, or hire purchase, against defects in materials or workmanship during manufacture. Within the guarantee period we undertake to repair or replace free of charge to the purchaser, any part found to be defective, excluding brushes, drive discs and vacuum skirts.

No liability is accepted for damage caused by accident, misuse or neglect, or the fitting of other than genuine Truvox parts. Truvox International Limited cannot accept reponsibility for repairs performed by persons other than a Truvox serivce engineer or an authorised service agent.

This guarantee is in addition to your statutory rights and does not affect your rights under the Supply of Goods (Implied Terms) Act 1973, or in general.

Truvox International Limited policy is one of continual product development and we reserve the right to alter specifications without prior notice.

9 Technical specification

All models : 230-240V ~ 50Hz, Class I construction. Enclosure to IPX4. Fitted with 15m supply cord type and 13A fused plug.

Model		**45cm 200**	**45cm 400**	**45cm 2/400**
Pad diameter	cm	43	43	43
Pad pressure	gm/cm²	22	22	27,5
Speed	rpm	190	380	190/380
Motor rating	W	1100	1100	1100
Max. start current	A	12	25	12/25
Average running current	A	3	5	3/5
Weight	kg	32	32	40
Weight with vacuum unit and skirt	kg	38	38	46
Noise level (*see note 1*)	dB(A)	53	53	53
Noise level with vacuum unit	dB(A)	69	69	69
Handle vibration (*see note 2)*	m/s²	< 2.5	< 2.5	< 2.5

1 - Noise levels measured at a distance of 1 metre from machine and 1,6 metres above floor, when scrubbing a hard floor. Measurements recorded using a hand held meter.

2 - Handle vibration does not exceed 2,5 m/s², when operating on any surface with brush or pads. Measurements recorded by an independent test laboratory.

CE Mark

This equipment is manufactured in accordance with European Safety Standards BS EN 60335-1 and BS EN 60335-2-67 and conforms with Directives 98/37/EC, 73/23/EEC and subsequent amendments.

10 Accessories

Item	Part No.	Usage
Polypropylene scrubbing brush	5-3431	wet scrubbing
Tynex scrubbing brush	5-3432	heavy duty wet scrubbing
Shampoo brush	5-3433	carpet cleaning
Bassine polishing brush	5-3434	polishing and spray cleaning
Gumati polishing brush	5-3435	polishing and spray cleaning
Standard drive disc *(see note 1)*	5-3436	retains cleaning pads
Flexi-drive disc	5-3437	retains cleaning pads
Solution tank	5-3438	scrubbing/shampooing
Anti-splash water skirt	5-3439	prevents splashing when wet scrubbing
Vacuum unit and hose	5-3440	dust extraction
Vacuum skirt	5-3441	dust extraction
Paper filter bags (10 pack)	2-3526	dust collection

1 - Suitable for 45cm 200 machine only.

IMPORTANT : Genuine accessories are only available from authorised Service Agents or Truvox Customer Services Dept.

11 Fault diagnosis

The following simple checks may be performed by the operator.

Trouble	Reason	Remedy
Machine not working, neon indicator not lit.	Lack of voltage/electrical supply.	Check fuse *, supply cord, plug and socket outlet.
Machine not working, neon indicator lit.	Switch interlock incorrectly operated. Motor overload cut-out operated.	Check operating procedure in instructions. Check brush/pad for good condition. Check correct liquid type & quantity. Check liquid dilution. Allow motor to cool.
Vacuum unit not working, neon indicator lit.	Motor overload cut-out operated.	Replace filter bag. Clear blocked hoses / connectors.
Machine wobbles or vibrates excessively.	Brush/pad worn or damaged. Pad not centered on drive disc. Pad dirty.	Renew brush/pad. Place pad in correct position. Clean the pad.

* If the fuse blows several times, the machine should be checked by an authorised Service Agent.

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Contents

Page

1 Product information 4
1.1 Important safety advice 4
1.2 Guidelines for the operator 4
1.3 Transporting the machine 4

2 Preparing for use 5
2.1 Electrical connection 5

3 Controls 5
3.1 Fitting pads 5
3.2 Adjusting the handle height 5

4 Operation 5
4.1 Starting the machine 6
4.2 Polishing 6
4.3 Scrubbing and Shampooing 6
4.4 Fitting the solution tank 6

5 Storage 6

6 Maintenance 6

7 After sales service 7

8 Guarantee 7

9 Technical specification 8

10 Accessories 8

11 Fault diagnosis 9

12 Declaration of conformity 10

IMPORTANT

READ THESE INSTRUCTIONS CAREFULLY AND RETAIN FOR FUTURE REFERENCE

1 Product information

These floor cleaning machines are designed for the scrubbing and polishing of hard floors and/or shampooing of carpets in indoor areas. They should not be used in outdoor areas or where excessive moisture is present.

The following instructions contain important information about the machines and safety advice for the operator.

Equipment must be operated, serviced and maintained in accordance with the manufacturer's instructions.

If in doubt contact the supplier of your machine.

These instructions are valid for the following models.

Orbis – OB28240 in all voltage variants

1.1 Important Safety Advice

When using electrical equipment basic safety precautions should be followed including the following.

- Read all instructions carefully before use.
- Keep children and unauthorised persons away from the machine when in use.
- **Do not** leave the machine connected to the electricity supply when not in use, always remove the plug from the socket-outlet.
- Switch off the machine before removing the plug.
- When unplugging pull the plug, not the supply cord.
- Keep the power supply cord clear of moving parts. During operation hazard may occur when running the machine over the power supply cord.
- **Do not** operate the machine with a damaged supply cord or plug, or after the machine malfunctions or is damaged in any way. Contact an authorised Service Agent for repair or adjustment.
- The plug of the power supply cord must be removed from the socket-outlet before commencing cleaning of the machine or undertaking maintenance operations.
- The power supply cord must be regularly inspected for signs of damage. If the power supply cord is damaged, it has to be replaced.
- **Do not** use where hazardous dust is present.
- **Do not** use in an explosive atmosphere.
- Take care when using a machine near the top of stairs to avoid overbalancing.

1.2 Guidelines for the operator

- Operators must be fully trained in the use of the machine in accordance with these instructions, able to perform user maintenance and the correct selection of accessories, i.e. brushes and pads etc.
- Operators should be physically capable to manoeuvre, transport and operate the machines.
- Operators should be able to recognise unusual operation of the machine and report any problems.
- Keep hands and feet well clear of rotating brushes.
- Let the machine do the work. Grip the handle as lightly as possible.
- Stand with feet slightly apart to maintain good balance. Avoid twisting the body more than 45 degrees.
- Wear suitable footwear to avoid slipping.
- Wear suitable clothing to keep dry and warm.
- Where possible implement job rotation and adequate rest periods to avoid continuous use of the same muscles.
- **Do not** smoke when using the machine.
- **CAUTION** - This machine is for dry use only and should not be used or stored outdoors in wet conditions.

1.3 Transporting the machine

CAUTION - THIS MACHINE IS HEAVY
Do not attempt to lift the machine without assistance. Incorrect lifting techniques may result in personal injury.

The machine can be moved to the area to be cleaned by wheeling on its rear transport wheels. With the handle in the upright position tip the machine backward to raise the head off the floor and push machine.

Stair Transport

Detach accessory, tilt handle and hold machine by the handgrip and the brush housing (2 persons).

Although the wheels would allow the operator to negotiate most stairs by pulling / pushing the machine up or down, the machine weighs 22kg and there is a risk that the operator may lose control of the machine or strain themselves, so we advise against climbing or descending stairs in this way.

When transporting the machine between separate sites in a car or van the handle can be locked in the folded position. Anchor the machine securely so that it cannot slide about in transit.

2 Preparing for use

2.1 Electrical connection

Before connecting the machine to the power supply, check that your supply voltage corresponds with that marked on the rating label on the handle of the machine.
The power supply cord plus any extension leads should not exceed 30m in total, otherwise you may experience problems starting up the machine. The cross-section of any extension cable wiring must be at least 2,5 mm^2.

UK only

The supply cord is fitted with a non rewireable plug containing a 13 amp fuse. Should the fuse require replacement it must only be replaced by a 13 amp fuse conforming to BS1362, and the fuse cover must be refitted. If the fuse cover is lost the plug **must not** be used until the correct replacement cover is fitted.

IMPORTANT - If the supply cord is damaged, it must only be replaced by a special cord available from the manufacturer or an authorised service agent.

WARNING -THIS APPLIANCE MUST BE EARTHED

3 Controls

The operating controls for all models are located on the handle (Fig. 1).

1 - Switch trigger, left hand
Used to switch motor ON and OFF. Can only be operated with handle in working position, and if left hand interlock button (2) has previously been depressed

2 - Interlock button, left hand
This must be depressed initially to enable left hand switch trigger to switch motor on.

3 - Switch trigger, right hand
Used to switch motor ON and OFF. Can only be operated with handle in working position, and if right hand interlock button (4) has previously been depressed.

4 - Interlock button, right hand
This must be depressed initially to enable right hand switch trigger to switch motor on.

5 - Handle adjustment lever
Used to adjust handle to comfortable working height. **Note:** For safety reasons the machine cannot be operated unless the handle is moved to a working height.

6 - Solution feed lever
Operates flow valve in solution tank (if fitted).
- Pull lever to release solution.
- Release lever to stop flow.

Cable winder

Used to hold supply cord in place on handle when machine is not in use.

Neon indicator (on handle)
Lights when the machine is connected to the power supply.

3.1 Fitting a brush or drive disc

WARNING - This appliance has been designed for use with the brushes, pad driver and pads specified by the manufacturer. The fitting of other accessories may affect its performance and safety.

Always ensure machine is unplugged before fitting or removing parts.

- Adjust handle to the fully upright position.
- Pull handle down until it rests on the floor and the brush guard is raised.
- Fit the brush/drive disc onto the drive plate and rotate it anti-clockwise until secure.
- Return machine to its normal upright position in readiness for starting.
- **IMPORTANT - Never allow the cleaning head to rest on a brush or pad when not in use.**

3.2 Adjusting the handle height

Select the most comfortable handle height using the adjustment lever as previously described (see **Controls**) and lock in position.

4 Operation

The normal movement of a machine in use is from side to side across the floor. This is achieved automatically by raising or lowering the handle whilst it is engaged in the normal working position.
Lowering the handle thereby increasing the pressure at the rear of the brush/drive disc, moves the machine to the left. Raising the handle increasing the pressure on the front of the brush/drive disc moves the machine to the right.
Inexperienced users are advised to practise controlling the machine on a smooth floor until they can handle the machine confidently.
Practice and some strength are required to operate the machine on uneven floors
The rear transport wheels should be raised off the floor whilst cleaning (Fig 3)
Effective cleaning and polishing is achieved by moving the machine in a **backwards** direction.
Do not leave the machine standing on a brush or pad when not in use.

4.1 Starting the machine

- Fully unwind the supply cord from the handle and plug into a convenient socket outlet. The neon indicator on the handle should light showing that power is available.
- With the handle set at a convenient working height and with both left and right hands on the handle, depress both interlock buttons with the thumbs and squeeze both switch triggers to start the machine (Fig.2). Ensure transport wheels are **not** touching the floor during start-up and operation (Fig 3).
- Once the machine has started the interlock buttons should be released.
- To stop the machine release both switch triggers.

4.2 Polishing

- Fit polishing brush or drive disc and pad suitable for the surface to be polished. (see **Accessories**).
- Apply polish to the floor in accordance with the manufacturer's instructions.
- **Do not** keep the machine rotating on one spot for more than 3 seconds, as this could cause overheating and damage the floor surface.

4.3 Scrubbing and Shampooing

- For scrubbing or shampooing the solution tank must be fitted as described (see **Fitting the solution tank**).
- Fit a brush or drive disc and pad suitable for the surface to be cleaned. (see **Accessories**).
- Fill the solution tank with water and an appropriate measure of detergent.
- **IMPORTANT** - Use only cleaning agents suitable for automatic machines i.e. low foaming, and follow the chemical manufactuers' directions regarding use, handling, disposal and health and safety provisions. Using other chemical products (e.g. chlorinated products) can damage or destroy the machine
- Before starting the machine release a liberal amount of cleaning solution from the tank to the floor. The flow of solution from the tank is controlled by moving the left hand lever. Releasing the lever stops the flow.
- Proceed to operate the machine in the normal manner, releasing more cleaning solution from time to time as required.
- **Do not** keep the machine rotating on one spot for more than 3 seconds, as this could cause overheating and damage the floor surface.
- Dirty water should not be allowed to accumulate on the floor, it should be removed to prevent dirt from settling. We suggest using a wet vacuum cleaner for this purpose.
- When scrubbing/shampooing is complete, unplug the machine from the power supply, empty the solution tank and clean and dry the machine.
- **IMPORTANT** - Dispose of unused cleaning solution in accordance with the manufacturer's directions.

4.4 Fitting the solution tank

NOTE - The solution tank is supplied as an optional accessory item, complete with attachments and fitting instructions.

- Move the handle to the upright position and clamp the tank support bracket to the handle tube in the specified position (Fig.4). (Refer to the instructions supplied with the tank).
- Take the solution tank and loop the control cord over the left hand operating lever and tie off to a suitable length. Rest the solution tank on the support bracket with the handle tube in the groove on the back of the tank.
- To secure the tank in position, engage the locking bar on the back of the tank.
- Adjust the length of the control cord by the spring loaded cord lock to ensure there is no tension on the cord when the flow control lever is not being used.
- Take the plastic tube supplied and push into the connector on the underside of the solution tank, and the other end onto the tube on the rop of the motor housing.

4.5 Removing the solution tank

- Pull off plastic tube from machine base.
- Raise locking bar on back of tank.
- Lift off tank and detach chain ring from lever.

5 Storage

Always unplug and wipe down and dry the machine after use. The machine should normally be stored with the handle in the fully upright position.

Wrap supply cord around the handlebar and cable winder ensuring that the plug is not trailing on the floor. Store the machine in a dry indoor area only.

Never store the machine with a pad or brush fitted as this causes distortion, and results in instability during operation.

6 Maintenance

WARNING - Before undertaking maintenance operations or adjustments switch off machine and unplug from the electricity supply.

The machine requires minimum maintenance apart from the following checks by the operator.

- **Supply cord** - Regularly inspect sheath, plug and cord anchorage for damage or loose connection.
- **Body of the machine** - Clean with a damp cloth.
- **Air vents -** Check for dust accumulation around the air inlet and outlet vents of the motor cooling-air system and clean if

necessary.
Blocked vents will cause the motor to overheat, and may lead to premature failure. Warranty claims for this type of damage will not be accepted

- **Solution tank** - Check water flow, if restricted inspect hoses and tubes for blockage or kinks. Dismantle control valve to clean if necessary. Check switch interlock for correct operation.
- **Motor overload cut-out** - All machines are fitted with an automatic reset motor overload cut-out. The cut-out will operate to protect the motor from overheating by switching the machine off when there is excessive friction/resistance to the cleaning head on the floor. This is usually caused by the stickiness of the pad or floor. Turn the cleaning pad over or if both sides are dirty replace with a clean pad. It is not possible to obtain a good finish on the floor using a dirty pad. Should the cut-out operate it will reset automatically when the motor has cooled sufficiently, usually after 15 - 30 mins.

IMPORTANT - Should the machine fail to operate contact Truvox Customer Service Department for rapid attention.

After sales service

Truvox machines are high quality machines that have been tested for safety by authorised technicians. It is always apparent that after longer working periods, electrical and mechanical components will show signs of wear and tear or ageing.

To maintain operational safety and reliability the following service interval has been defined: Every year or after 250 hours.

Under extreme or specialised conditions and/or insufficient maintenance, shorter maintenance intervals are necessary. Use only original Truvox spare parts. Use of other spare parts will invalidate all warranty and liability claims!

Should you require after sales service please contact the supplier from whom you purchased the machine,who will arrange service. Repairs and servicing of Truvox products should only be performed by trained staff. Improper repairs can cause considerable dangers to the user.
Enquire about the Truvox low cost and efficient Maintenance Contract.

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8 Guarantee

Your product is guaranteed for two years from the date of original purchase, or hire purchase, against defects in materials or workmanship during manufacture. Within the guarantee period we undertake at our discretion, to repair or replace free of charge to the purchaser, any part found to be defective, subject to the following conditions.

CONDITIONS
1. Claims made under the terms of the guarantee must be supported by the original invoice/bill of sale issued at the time of sale, or the machine Serial No.
2. For claims under this guarantee contact the supplier from whom you purchased the product who will arrange the appropriate action. Do not initially return the product as this could result in transit damage.
3. Neither Truvox nor its distibutor shall be liable for any incidental or consequential loss.
4. This guarantee is governed by the laws of England.
5. This guarantee does not cover any of the following:

- Periodic maintenance, and repair or replacement of parts due to normal wear and tear.
- Damage caused by accident, misuse or neglect, or the fitting of other than genuine Truvox parts.
- Defects in other than genuine Truvox parts, or repairs, modifications or adjustments performed by other than a Truvox service engineer or authorised service agent.
- Costs and risks of transport relating directly or indirectly to the guarantee of this product.
- Consumable items such as, brushes, drive discs, filters and vacuum skirts.

This guarantee does not affect your statutory rights, nor your rights against the supplier arising from their sales or purchase contract.

Truvox International Limited policy is one of continual product development and we reserve the right to alter specifications without prior notice

9 Technical Specification

All models : Class I construction. Enclosure to IPX4. Fitted with 15m supply cord type H05VV-F 3x1.0mm² (10A), and non rewireable plug.

Model		OB28240
Working width	cm	28
Pad diameter	cm	28
Pad pressure	gm/cm²	24.4
Voltage a.c.	V	220 - 240
Frequency	Hz	50
Motor speed	rpm	1400
Motor rating	W	550
Handle height	cm	115
Weight	kg	22
Noise Level (*see note 1)*	dB(A)	71.4
Handle vibration (*see note 2)*	m/s²	< 2.5

1 - Noise levels measured at a distance of 1 metre from machine and 1,6 metres above floor, when scrubbing a hard floor. Measurements recorded using a hand held meter.

2 - Handle vibration does not exceed 2,5 m/s², when operating on any surface with brush or pads.
Measurements recorded by an independent test laboratory.

10 Accessories

Item	Part No.	Usage
Polypropylene scrubbing brush	05-4442-0000	Wet scrubbing
Shampoo brush	05-4443-0000	Carpet cleaning
Gumati polishing brush	05-4444-0000	Polishing
Standard drive disc *(see note 1)*	05-4441-0000	Retains cleaning pads
Solution tank	05-4435-0000	5 litre tank for scrubbing or shampooing
Furniture guard	03-8061-0000	Additional protection from knocks

Note1: Always use high quality 28cm pads. Use of poor quality or incorrect size pads will affect machine performance. Always replace pads when they are worn or dirty.

IMPORTANT : Genuine accessories are only available from authorised Service Agents or Truvox Customer Service Dept.

11 Fault diagnosis

The following simple checks may be performed by the operator.

Trouble	Reason	Remedy
Machine not working, neon indicator not lit.	- Lack of voltage/electrical supply.	- Check fuse *, supply cord, plug and socket outlet.
Machine not working, neon indicator lit.	- Switch interlock incorrectly operated.	- Check operating procedure in instructions.
Machine wobbles or vibrates excessively.	- Pad worn or damaged. - Pad dirty. - Pad loose - Pad off centre.	- Renew pad. - Clean the pad. - Tighten pad lock. - Reposition pad

* If the fuse blows several times, the machine should be checked by an authorised Service Agent.

Clemas & Co Ltd
Industrial Cleaning Equipment
Sales - Hire - Service

ORBIS CORDLESS BURNISHER OPERATOR MANUAL

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Tel: 01684 850777 **Fax**: 01684 850707
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Fig 1

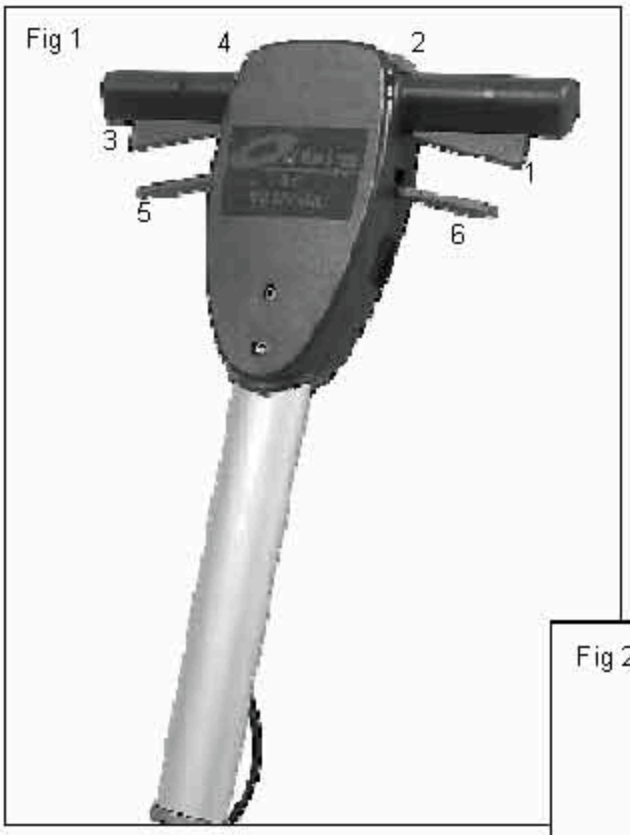


Fig 2

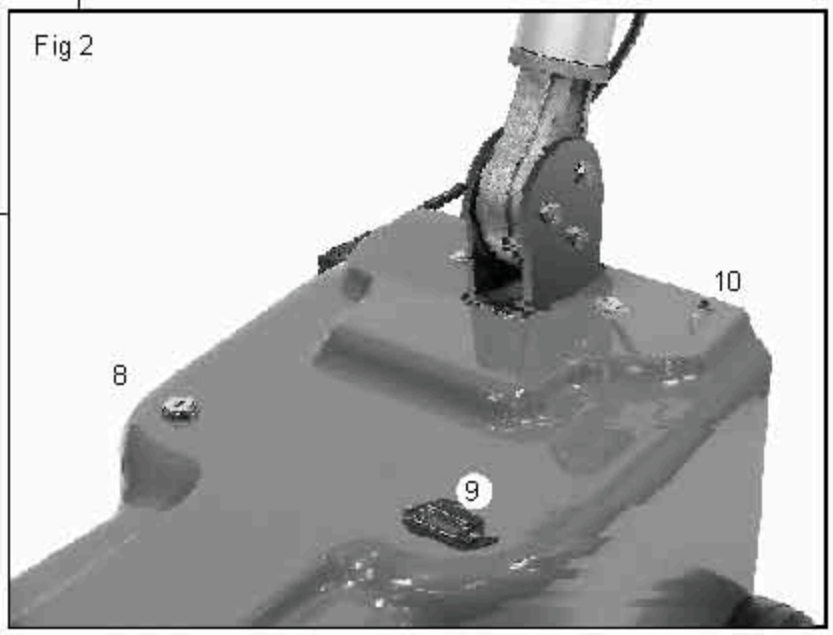
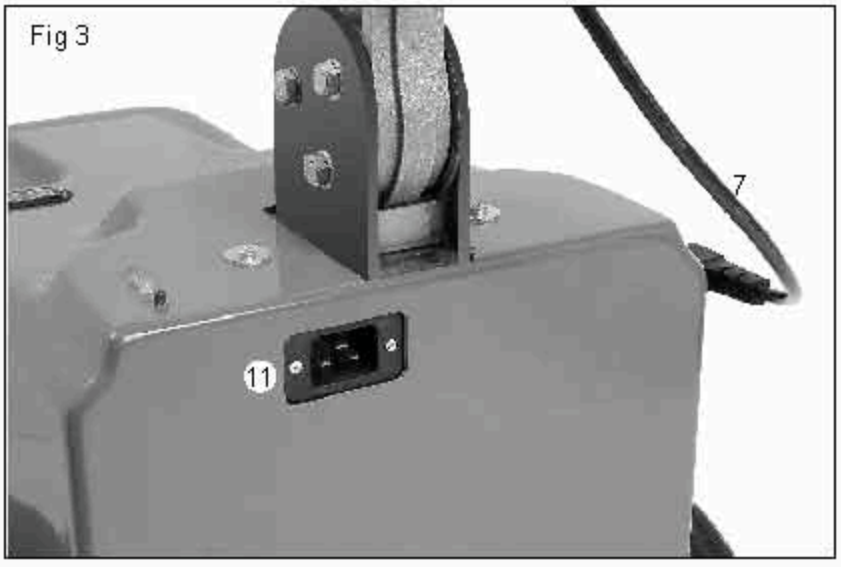


Fig 3



Contents

Page

1 Product information 5
1.1 Important safety advice 5
1.2 Guidelines for the operator 5
1.3 Transporting the machine 5

2 Preparing for use 5
2.1 Electrical connection 5

3 Controls 6
3.1 Fitting pads 6
3.2 Adjusting the handle height 6

4 Operation 6
4.1 Starting the machine 6
4.2 Burnishing 6
4.3 Cleaning solutions 6
4.4 When cleaning is finished 6
4.5 Recharging the batteries 6

5 Storage 7

6 Maintenance 7

7 After sales service 7

8 Guarantee 7

9 Technical specification 8

10 Accessories 8

11 Fault diagnosis 9

12 Declaration of conformity 10

IMPORTANT

READ THESE INSTRUCTIONS CAREFULLY AND RETAIN FOR FUTURE REFERENCE

1 Product information

This commercial battery powered burnisher is the latest innovation at the forefront of daytime cleaning. Its quietness of operation and compact design make it ideal for use in a variety of environments. It is especially suited for use on hard floors in hotels, schools, hospitals, factories, retail shops and stores, and offices.

Maintenance free (gel) batteries must be used which provide up to 2 hours running time. A battery life indicator allows the operator to asses the degree of battery life available, and an on board battery charger enables convenient charging when the batteries are discharged.

The machine can be fitted with an optional handle mounted cleaning solution spray system, which can be operated whilst gripping the handle with both hands thereby maintaining full control of the machine.

The following instructions contain important information about the machines and safety advice for the operator.

Equipment must be operated, serviced and maintained in accordance with the manufacturer's instructions.

If in doubt contact the supplier of your machine.

1.1 Important Safety Advice

When using electrical equipment basic safety precautions should be followed including the following.

- Read all instructions carefully before use.
- Keep children and unauthorised persons away from the machine when in use.
- **Do not** leave the key in the operating switch when not in use, always remove the key.
- **Do not** operate the machine if the machine malfunctions or is damaged in any way. Contact an authorised Service Agent for repair or adjustment.
- **Do not** operate the machine when connected to the mains electrical supply.
- The key of the operating switch must be removed before commencing cleaning of the machine or undertaking maintenance operations.
- After battery charging, disconnect electrical supply before unplugging charging lead from machine.
- When unplugging pull the plug, not the cord.
- The battery charging lead is to be regularly inspected for signs of damage. If the lead is damaged, it has to be replaced.
- **Do not** use where hazardous dust is present.
- **Do not** use in an explosive atmosphere.
- Take care when using a machine near the top of stairs to avoid overbalancing.

1.2 Guidelines for the operator

- Operators must be fully trained in the use of the machine in accordance with these instructions, able to perform user maintenance and the correct selection of accessories, i.e. pads etc.
- Operators should be physically capable to manoeuvre, transport and operate the machine.
- Operators should be able to recognise unusual operation of the machine and report any problems.
- Keep hands and feet well clear of rotating pad.
- Wear suitable footwear to avoid slipping.
- Wear suitable clothing to keep dry and warm.
- Where possible implement job rotation and adequate rest periods to avoid continuous use of the same muscles.
- **Do not** smoke when using the machine.
- **CAUTION** - This machine is for dry use only and should not be used or stored outdoors in wet conditions.

1.3 Transporting the machine

CAUTION - THIS MACHINE IS HEAVY

Do not attempt to lift the machine without mechanical assistance. Do not lift the machine by the handle or outer cover, always lift from the chassis. Use a mechanical lift, hoist or forklift and ensure the machine is adequately supported and secured before lifting. Incorrect lifting techniques may result in personal injury.

To move the machine to the work area:
i) with pad fitted - lock the handle and tilt it backwards to raise the front off the floor, and wheel into position.

ii) without pad - lock handle at a comfortable height and wheel machine into position.

CAUTION - Bumping over thresholds, kerbs and similar obstacles can damage the machine. Small obstacles can be overcome by pulling the machine backwards.

2 Preparing for use

2.3 Electrical connection

Before connecting the machine to the power supply for battery charging, check that your supply voltage corresponds with that marked on the rating label on the handle of the machine.

UK only

The charging lead is fitted with a non rewireable plug containing a 13 amp fuse. Should the fuse require replacement it must only be replaced by a 13 amp fuse conforming to BS1362, and the fuse cover must be refitted. If the fuse cover is lost the plug **must not** be used until the correct replacement cover is fitted.

IMPORTANT - If the charging lead is damaged, it must only be replaced by a special cord available from the manufacturer or an authorised service agent.

WARNING -THIS APPLIANCE MUST BE EARTHED

3 Controls

The main operating controls are located on the handle

1 - Switch trigger, left hand (fig 1)
Used to switch motor ON and OFF. Can only be operated with handle in working position, and if left hand interlock button (2) has previously been depressed

2 - Interlock button, left hand (fig 1)
This must be depressed initially to enable left hand switch trigger to switch motor on.

3 - Switch trigger, right hand (fig 1)
Used to switch motor ON and OFF. Can only be operated with handle in working position, and if right hand interlock button (4) has previously been depressed.

4 - Interlock button, right hand (fig 1)
This must be depressed initially to enable right hand switch trigger to switch motor on.

5 - Handle adjustment lever (fig 1)
Used to adjust handle to comfortable working height. **Note:** For safety reasons the machine cannot be operated unless the handle is moved to a working height.

6 - Solution feed lever (fig 1)
Operates flow valve in spray bottle (if fitted).
- Pull lever to release solution.
- Release lever to stop flow.

7 - Handle drop lead (fig 3)
Connects battery to controls.

8 - Key operated switch (fig 2)
Switches battery power ON and OFF.

9 - Battery life indicator (fig 2)
Gives indication of battery life available.

10 - Battery charge indicator lights (fig 2)
Show charge state of battery.

11 - Socket connector (fig 3)
Connection point for battery charging lead.

12 - Battery charging lead (not shown)
Connects machine to electricity supply for battery charging.

3.1 Fitting pads

WARNING - This appliance has been designed for use with the pads specified by the manufacturer. The fitting of other pads may affect its performance and safety.

Always ensure machine is switched OFF by the key operated switch and the key removed before fitting or removing pads.

- Raise cleaning head by locking the handle in the upright position and pulling handle backwards to rest on the floor.
- **CAUTION - If spray bottle is fitted, lower handle gently to avoid damaging bottle.**
- Press cleaning pad centrally onto drive disc.
- Return machine to upright position.
- **IMPORTANT - Never allow the cleaning head to rest on the pad when not in use. Always remove the pad after use.**

3.2 Adjusting the handle height

Select the most comfortable handle height using the adjustment lever as previously described (see **Controls**) and lock in position.

4 Operation

4.1 Starting the machine

- Turn the key operated switch to the ON position.
- With the handle set at a comfortable working height and with both left and right hands on the handle, depress both interlock buttons with the thumbs and squeeze both switch triggers to start the machine (Fig.3).
- **WARNING - Never start the machine without pads fitted.**
- Once the machine has started the push buttons can be released. The machine will operate with either or both of the switch triggers held.
- To stop the machine release both switch triggers.
- Normal movement of the machine is in a **forward and backward** direction.

4.2 Burnishing

- Fit pads suitable for the speed of the machine and the surface to be polished, as recommended by the pad manufacturer.
- Apply cleaning solution to the floor in accordance with the manufacturer's instructions.
- **Do not keep the machine rotating on one spot, as this could cause overheating and damage the floor surface.**

4.3 Cleaning solutions

The choice of cleaning solution is at the discretion of the operator, when assesing the surface to be cleaned. Cleaning solutions are only recommended for stubborn marks and should not be used as a general cleaning aid.

4.4 When cleaning is finished

- Switch OFF machine, raise cleaning head and remove pad.
- Wipe over the machine with a damp cloth.
- Check battery life indicator and recharge as necessary.

4.5 Recharging the batteries

- **IMPORTANT** - Only recharge the battery when the battery life indicator is in the red zone (two lights remaining).
- **IMPORTANT** - Opportunity / top up charging will damage the batteries. This will cause run time to fall and overall battery life will be affected. AVOID TOP UP CHARGING.
- Take the battery charging lead supplied with the machine and connect into the charging socket on the left rear of the machine, and plug the other end into the mains supply.
- To fully charge the batteries takes 11 - 13 hours.
- The charge indicator lights on the body of the machine show:-
  - Red - Connected to mains supply.
  - Yellow - Charging in progress.
  - Green - Batteries fully charged.

  Do not operate the machine when connected to the mains electrical supply.
- **CAUTION - Unplug lead from mains before disconnecting lead from the machine.**

5 Storage

Always switch off and wipe down and dry the machine after use. Never store the machine with a pad fitted as this causes distortion, and results in instability during use.

Store the machine in a dry indoor area only.

6 Maintenance

WARNING - Before undertaking maintenance operations or adjustments switch off machine and unplug from the electricity supply.

The machine requires minimum maintenance apart from the following checks by a trained operator.

- **Charging cord and plug**- Regularly inspect sheath, plug and cord for damage or loose connection. Only replace the cord with the type specified in these instructions.

7 After sales service

Should you require after sales service please contact the supplier from whom you purchased the machine,who will arrange service. Repairs and servicing of Truvox products should only be performed by trained staff. Improper repairs can cause considerable dangers to the user.
Enquire about the Truvox low cost and efficient Maintenance Contract.

8 Guarantee

Your product is guaranteed for **one** year from the date of original purchase, or hire purchase, against defects in materials or workmanship during manufacture. Within the guarantee period we undertake at our discretion, to repair or replace free of charge to the purchaser, any part found to be defective, subject to the following conditions.

CONDITIONS

1. Claims made under the terms of the guarantee must be supported by the original invoice/bill of sale issued at the time of sale, or the machine Serial No.
2. For claims under this guarantee contact the supplier from whom you purchased the product who will arrange the appropriate action. Do not initially return the product as this could result in transit damage.
3. Neither Truvox nor its distibutor shall be liable for any incidental or consequential loss.
4. This guarantee is governed by the laws of England.
5. This guarantee does not cover any of the following:
   - Periodic maintenance, and repair or replacement of parts due to normal wear and tear.
   - Damage caused by accident, misuse or neglect, or the fitting of other than genuine Truvox parts.
   - Defects in other than genuine Truvox parts, or repairs, modifications or adjustments performed by other than a Truvox service engineer or authorised service agent.
   - Incorrect charging and maintenance of batteries.
   - Costs and risks of transport relating directly or indirectly to the guarantee of this product.
   - Consumable items such as cleaning pads and batteries.

This guarantee does not affect your statutory rights, nor your rights against the supplier arising from their sales or purchase contract.

Truvox International Limited has a policy of continual product development and we reserve the right to alter specifications without prior notice.

9 Technical specification

Batteries 2 x maintenance free 12V, DC, traction batteries. Supplied with 2m battery charging lead, type H05VV-F 3 x 1.0mm² (10A), and plug. Class I construction.

Model		OBB1500
Working width	cm	43
Pad diameter	cm	43
Pad pressure	gm/cm²	3.0
Charging voltage a.c. - 50Hz	V	230
Voltage d.c.	V	24
Motor speed	rpm	1500
Motor rating	W	480
Handle height	cm	110
Weight (without batteries)	kg	25.6
Weight (with batteries)	kg	63
Sound pressure level (*see note 1*)	dB(A)	56.6
Handle vibration (*see note 2*)	m/s²	< 2.5

1 - Sound pressure level measured at a distance of 1 metre from machine and 1,6 metres above floor, when burnishing a hard floor. Measurements recorded using a hand held meter.

2 - Handle vibration does not exceed 2,5 m/s², when operating on any surface with pads. Measurements recorded by an independent test laboratory.

10 Accessories

Item	Part No.	Usage
Spray system kit	05-4156-0000	Spray cleaning attachment

IMPORTANT : Genuine accessories are only available from authorised Service Agents or Truvox Customer Service Dept.

11 Fault diagnosis

The following simple checks may be performed by the operator.

Fault	Reason	Remedy
Machine not working, battery life indicator red.	Lack of voltage, flat battery.	Recharge battery.
Machine not working, battery life indicator lit.	Switch interlock incorrectly operated. Loose connection on handle drop lead. Current overload fuse blown.*	Check operating procedure in instructions. Check drop lead is fully inserted into socket. Contact Service Agent.
Machine wobbles or vibrates excessively.	Pad worn or damaged. Pad not centred on drive disc. Pad dirty. Incorrect pad selection	Renew pad. Place pad in correct position. Clean the pad. Contact pad supplier.

* If the fuse blows several times, the machine should be checked by an authorised Service Agent.

Clemas & Co Ltd
Industrial Cleaning Equipment
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ORBIS DUO
SCRUBBER POLISHER
OPERATOR MANUAL

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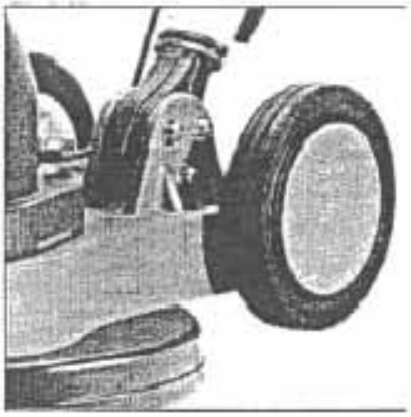

Fig. 1

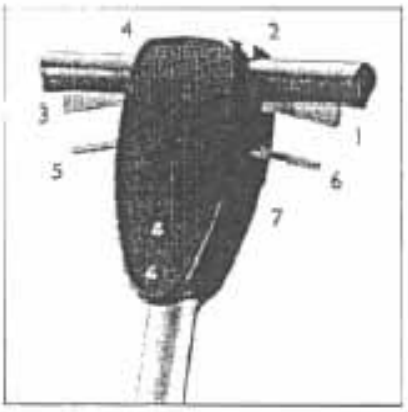

Fig. 2

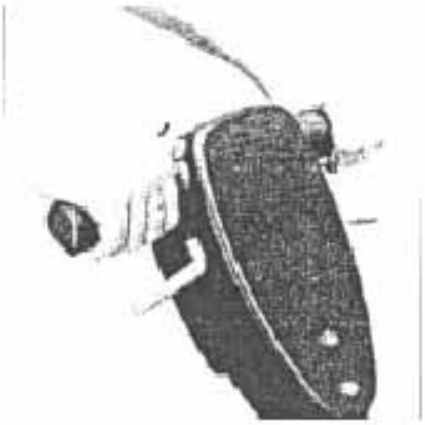

Fig. 3

Fig.4

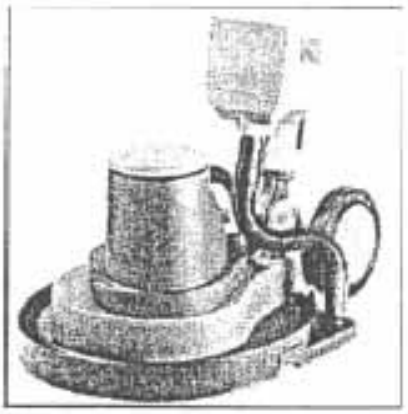

Fig. 5

Contents

Page

1 General Information 5
- 1.1 Important safety advice 5
- 1.2 Guidelines for the operator 5
- 1.3 Transporting the machine 5
- 1.4 Electrical connection 5

2 Preparing for use 6
- 2.1 Fitting the handle 6
- 2.2 Fitting the dust bag 6

3 Controls 6
- 3.1 Fitting a brush or drive disc 6
- 3.2 Adjusting the handle height 6

4 Operation 6
- 4.1 Starting the machine 6
- 4.2 Model 452/400 dual speed 7
- 4.3 Polishing 7
- 4.4 Scrubbing and shampooing 7
- 4.5 Fitting the solution tank 7
- 4.6 Removing the solution tank 7
- 4.7 The vacuum unit 7
- 4.8 Fitting the vacuum skirt 7
- 4.9 Fitting the vacuum unit 8
- 4.10 Using the vacuum unit 8

5 Storage 8

6 Maintenance 8

7 After sales service 8

8 Guarantee 8

9 Technical specification 9

10 Accessories 10

11 Fault diagnosis 11

IMPORTANT
READ THESE INSTRUCTIONS CAREFULLY AND RETAIN FOR FUTURE REFERENCE

1 General Information

These floor cleaning machines are designed for the scrubbing and polishing of hard floors and/or shampooing of carpets in indoor areas. They should not be used in outdoor areas or where excessive moisture is present.

The following instructions contain important information about the machines and safety advice for the operator.

NOTE - To protect the machine from possible damage during transit, the machine base and handle are packed seperately. Ensure that both items are present and follow the simple assembly instructions to bring the machine into service.

Equipment must be operated, serviced and maintained in accordance with the manufacturer's instructions.

If in doubt contact the supplier of your machine.

These instructions are valid for the following models.

Orbis – OB45200, OB45400, OB452/400

1.1 Important Safety Advice

When using electrical equipment basic safety precautions should be followed including the following.

- Read all instructions carefully before use.
- Keep children and unauthorised persons away from the machine when in use.
- **Do not** leave the machine connected to the electricity supply when not in use, always remove the plug from the socket-outlet.
- Switch off the machine before removing the plug.
- When unplugging pull the plug, not the supply cord.
- Keep the power supply cord clear of moving parts. During operation hazard may occur when running the machine over the power supply cord.
- **Do not** operate the machine with a damaged supply cord or plug, or after the machine malfunctions or is damaged in any way. Contact an authorised Service Agent for repair or adjustment.
- The plug of the power supply cord must be removed from the socket-outlet before commencing cleaning of the machine or undertaking maintenance operations.
- The power supply cord is to be regularly inspected for signs of damage. If the power supply cord is damaged, it has to be replaced.
- **Do not** use where hazardous dust is present.
- **Do not** use in an explosive atmosphere.
- Take care when using a machine near the top of stairs to avoid overbalancing.

1.2 Guidelines for the operator

- Operators must be fully trained in the use of the machine in accordance with these instructions, able to perform user maintenance and the correct selection of accessories, i.e. brushes and pads etc.
- Operators should be physically capable to manoeuvre, transport and operate the machines.
- Operators should be able to recognise unusual operation of the machine and report any problems.
- Let the machine do the work. Grip the handle as lightly as possible.
- Stand with feet slightly apart to maintain good balance. Avoid twisting the body more than 45 degrees.
- Wear suitable footwear to avoid slipping.
- Wear suitable clothing to keep dry and warm.
- Where possible implement job rotation and adequate rest periods to avoid continuous use of the same muscles.
- **Do not** smoke when using the machine.
- **CAUTION** - This machine is for dry use only and should not be used or stored outdoors in wet conditions.

1.3 Transporting the machine

CAUTION - THIS MACHINE IS HEAVY
Do not attempt to lift the machine without assistance. Incorrect lifting techniques may result in personal injury.

When transporting the machine the handle should be locked in the upright position.

1.4 Electrical connection

Before connecting the machine to the power supply, check that your supply voltage corresponds with that marked on the rating label on the handle of the machine.

The supply cord is fitted with a non-rewireable plug containing a 13 amp fuse. Should the fuse require replacement it must only be replaced by a 13 amp fuse conforming to BS1362, and the fuse cover **must** be refitted. If the fuse cover is lost the plug **must not** be used until the correct replacement cover is fitted.

IMPORTANT - If the supply cord is damaged, it must only be replaced by a special cord available from the manufacturer or an authorised service agent.

WARNING -THIS APPLIANCE MUST BE EARTHED

2 Preparing for use

2.1 Fitting the handle

1. Carefully remove the machine base and handle from their respective packaging.
2. Check that the following items are present with the base and remove them from their transit position.
   M8 x 70 Hex.Hd. bolt (3)
   M8 Nyloc Hex. nut (3)
   M8 Plain washer (6)
   13mm A/F Spanner (2)
3. Take handle and check that 'O' rings on either side of the knuckle pivot are seated in their grooves, and that the datum mark on the pivot gear is aligned with the handle tube. If this is not the case, raise the handle adjustment lever and rotate the pivot gear until the datum mark is in line with the handle tube, and release the adjustment lever.
4. With the handle held vertically and cable winder to the rear, lower pivot between the raised flanges on the machine base.
5. Align holes in pivot with those on base and fit the three M8 bolts, washers and nuts, and tighten using the spanners supplied (Fig.1).
6. Connect supply lead from handle to socket on motor housing.

3 Controls

The operating controls for all models are located on the handle (Fig. 2).

1 - Switch trigger, left hand

Used to switch motor ON and OFF. Can only be operated with handle in working position, and if left hand interlock button (2) has previously been depressed.

2 - Interlock button, left hand

This must be depressed initially to enable left hand switch trigger to switch motor on.

3 - Switch trigger, right hand

Used to switch motor ON and OFF. Can only be operated with handle in working position, and if right hand interlock button (4) has previously been depressed.

4 - Interlock button, right hand

This must be depressed initially to enable right hand switch trigger to switch motor on.

5 - Handle adjustment lever

Used to adjust handle to comfortable working height. Note for safety reasons the machine cannot be operated unless the handle is moved to a working height.

6 - Solution feed lever

Operates flow valve in solution tank (if fitted).

- Pull lever to release solution.

- Release lever to stop flow.

7 - Socket connector

Connection point for vacuum unit lead.

Drive plate

Attachment point for brush or drive disc and pad.

Cable winder

Used to hold supply cord in place on handle when machine is not in use. Can be turned to enable quick release of cord.

Motor overload cut-out

Protects motor from overload and possible damage. The cut-out will reset automatically when cooled sufficiently, enabling the motor to restart.

Neon indicator (on handle)

Lights when the machine is connected to the power supply.

3.1 Fitting a brush or drive disc

Always ensure machine is unplugged before fitting or removing parts.

- Adjust handle to the fully upright position.
- Pull handle down until it rests on the floor and the brush guard is raised.
- Fit the brush/drive disc onto the drive plate and rotate it anti-clockwise until secure.
- Return machine to its normal upright position in readiness for starting.

3.2 Adjusting the handle height

Select the most comfortable handle height using the adjustment lever as previously described (see Controls) and lock in position.

4 Operation

The normal movement of a machine in use is from side to side across the floor. This is achieved automatically by raising or lowering the handle whilst it is engaged in the normal working position.

Lowering the handle thereby increasing the pressure at the rear of the brush/drive disc, moves the machine to the left. Raising the handle increasing the pressure on the front of the brush/drive disc moves the machine to the right.

Effective cleaning and polishing is achieved by moving the machine in a backwards direction.

Do not leave the machine standing on a brush or pad when not in use.

4.1 Starting the machine

- Fully unwind the supply cord from the handle and plug into a convenient socket outlet. The neon indicator on the handle should light showing that power is available.
- With the handle set at a convenient working height and with both left and right hands on the handle, depress both interlock buttons with the thumbs and squeeze both switch triggers to start the machine (Fig.3).

- Once the machine has started the interlock buttons should be released.
- To stop the machine release both switch triggers.

4.2 Orbis 452/400 dual speed

The speed selector switch on the dual speed model is located on the motor housing. Ensure machine is switched off before changing the speed setting.

4.3 Polishing

- Fit polishing brush or drive disc and pad suitable for the speed of the machine and the surface to be polished. (see **Accessories**).
- Apply polish to the floor in accordance with the manufacturers instructions.
- **Do not** keep the machine rotating on one spot for more than 3 seconds, as this could cause overheating and damage the floor surface.

4.4 Scrubbing and Shampooing

- For scrubbing or shampooing the solution tank must be fitted as described (see **Fitting the solution tank**).
- Fit a brush or drive disc and pad suitable for the surface to be cleaned. (see **Accessories**).
- **WARNING - This appliance has been designed for use with the brushes specified by the manufacturer. The fitting of other brushes may affect its safety.**
- Fill the solution tank with water and an appropriate measure of detergent.
- **IMPORTANT** - Use only cleaning agents suitable for automatic machines i.e. low foaming, and follow the chemical manufactuers' directions regarding use, handling, disposal and health and safety provisions.
- Before starting the machine release a liberal amount of cleaning solution from the tank to the floor. The flow of solution from the tank is controlled by moving the left hand lever. Releasing the lever stops the flow.
- Proceed to operate the machine in the normal manner, releasing more cleaning solution from time to time as required.
- **Do not** keep the machine rotating on one spot for more than 3 seconds, as this could cause overheating and damage the floor surface.
- Dirty water should not be allowed to accumulate on the floor, it should be removed to prevent dirt from settling. We suggest using a suction dryer for this purpose.
- When scrubbing/shampooing is complete, unplug the machine from the power supply, empty the solution tank and clean and dry the machine.
- **IMPORTANT** - Dispose of unused cleaning solution in accordance with the manufacturer's directions.

4.5 Fitting the solution tank

NOTE - The solution tank is supplied as an accessory item, complete with attachments and fitting instructions.

- Move the handle to the upright position and clamp the tank support bracket to the handle tube in the specified position (Fig.4). (Refer to the instructions supplied with the tank).
- Take the solution tank and pass the ring on the tank chain over the left hand operating lever and locate the ring in the inside slot on the top of the lever. Rest the solution tank on the support bracket with the handle tube in the groove on the back of the tank.
- To secure the tank in position, engage the locking bar on the back of the tank.
- Adjust the length of the chain by means of the screw and nut adjuster to ensure there is no tension on the chain when the flow control lever is not being used.
- Take the plastic tube supplied and push rigid end of tube into the connector on the underside of the solution tank, and the other end onto the tube at the rear of the motor housing. The tank connector is of the sealed lock-in type once the tube is connected. To release, press down on the orange collar of the connector with the finger tips and pull out tube.

4.6 Removing the solution tank

- Pull off plastic tube from machine base.
- Raise locking bar on back of tank.
- Lift off tank and detach chain ring from lever.

4.7 The vacuum unit

NOTE - The vacuum unit and vacuum skirt are supplied as accessory items, complete with attachments and fitting instructions.The vacuum unit combined with the vacuum skirt provides full dust control, eliminating the need to pre-dust or post dust the floor. The unit is designed to fit readily to all Orbis models.

IMPORTANT - The vacuum unit is NOT suitable for any form of wet cleaning.

4.8 Fitting the vacuum skirt

- Unplug and lay the machine down with the handlebar resting on the floor. Remove the brush or drive disc.
- Stretch and fit the rubber buffer around the brush guard.
- The flexible section of the skirt has a special spring sewn into the fabric. Fit this spring section into the groove in the rubber buffer.
- The spring is a reasonably tight fit to prevent accidental movement in use and therefore must be pulled onto the buffer by stretching.
- With the skirt on the buffer it can be moved in its groove to bring the hose connector to the rear, ensuring the base moulding lies in the cut-out provided in the outer ring of the skirt, enabling free movement when in use (Fig.5).

4.9 Fitting the vacuum unit

- Stand machine upright, and clamp the vacuum unit support bracket to the handle tube in the specified position. (Refer to the instructions supplied with the unit).
- Rest the vacuum unit on the support bracket with the control switch to the rear, and engage the locking bar on the back of the unit to secure it in position.
- Push the flexible hose on to the vacuum unit and skirt.
- Plug the electrical lead from the vacuum unit into the socket situated on the left side of the handle moulding.
- The machine is now ready for use. The switch controlling the vacuum unit is located on the back of the unit. The OFF position is marked O.

4.10 Using the vacuum unit

IMPORTANT - For maximum suction the sliding shutter on the top of the unit must be closed.

- Dust collected by the unit is contained within the filter bag located behind the front cover.
- To replace the filter bag, switch off vacuum unit, release front cover catch and lift off cover.
- Remove and dispose of used bag. Fit new bag and replace front cover.

5. Storage

Always unplug and wipe down and dry the machine after use. The machine should normally be stored with the handle in the fully upright position.

Wrap supply cord around the handlebar and cable winder ensuring that the plug is not trailing on the floor. Store the machine in a dry indoor area only.

Never store the machine with a pad fitted as this causes distortion, and results in instability during operation.

6. Maintenance

WARNING - Before undertaking maintenance operations or adjustments switch off machine and unplug from the electricity supply.

The machine requires minimum maintenance apart from the following checks by the operator.

- **Supply cord** - Regularly inspect sheath, plug and cord anchorage for damage or loose connection.
- **Solution tank** - Check water flow, if restricted inspect hoses and tubes for blockage or kinks. Dismantle control valve to clean if necessary. Check switch interlock for correct operation.
- **Vacuum unit** - All dust bags must be changed regularly and hoses and connectors checked for blockage to avoid unsatisfactory results.
- **Motor overload cut-out** - All machines are fitted with an automatic reset motor overload cut-out. The cut-out will operate to protect the motor from overheating by switching the machine off when there is excessive friction/resistance to the cleaning head on the floor. This is usually caused by the stickiness of the pad or floor. Turn the cleaning pad over or if both sides are dirty replace with a clean pad. It is not possible to obtain a good finish on the floor using a dirty pad. Should the cut-out operate it will reset automatically when the motor has cooled sufficiently, usually after 15 - 30 mins.

IMPORTANT - Should the machine fail to operate contact the supplier from whom you purchased the machine.

7 After sales service

Should you require after sales service please contact the supplier from whom you purchased the machine,who will arrange service. Repairs and servicing of Truvox products should only be performed by trained staff. Improper repairs can cause considerable dangers to the user.

8 Guarantee

Your product is guaranteed for two years from the date of purchase, or hire purchase, against defects in materials or workmanship during manufacture. Within the guarantee period we undertake to repair or replace free of charge to the purchaser, any part found to be defective, excluding brushes, drive discs and vacuum skirts.

No liability is accepted for damage caused by accident, misuse or neglect, or the fitting of other than genuine Truvox parts. Truvox International Limited cannot accept reponsibility for repairs performed by persons other than a Truvox serivce engineer or an authorised service agent.

This guarantee is in addition to your statutory rights and does not affect your rights under the Supply of Goods (Implied Terms) Act 1973, or in general.

Truvox International Limited policy is one of continual product development and we reserve the right to alter specifications without prior notice.

9 Technical specification

All models : 230-240V ~ 50Hz, Class I construction. Enclosure to IPX4. Fitted with 15m supply cord type and 13A fused plug.

Model		45cm 200	45cm 400	45cm 2/400
Pad diameter	cm	43	43	43
Pad pressure	gm/cm²	22	22	27,5
Speed	rpm	190	380	190/380
Motor rating	W	1100	1100	1100
Max. start current	A	12	25	12/25
Average running current	A	3	5	3/5
Weight	kg	32	32	40
Weight with vacuum unit and skirt	kg	38	38	46
Noise level (*see note 1*)	dB(A)	53	53	53
Noise level with vacuum unit	dB(A)	69	69	69
Handle vibration (*see note 2*)	m/s²	< 2.5	< 2.5	< 2.5

1 - Noise levels measured at a distance of 1 metre from machine and 1,6 metres above floor, when scrubbing a hard floor. Measurements recorded using a hand held meter.

2 - Handle vibration does not exceed 2,5 m/s², when operating on any surface with brush or pads. Measurements recorded by an independent test laboratory.

CE Mark

This equipment is manufactured in accordance with European Safety Standards BS EN 60335-1 and BS EN 60335-2-67 and conforms with Directives 98/37/EC, 73/23/EEC and subsequent amendments.

10 Accessories

Item	Part No.	Usage
Polypropylene scrubbing brush	5-3431	wet scrubbing
Tynex scrubbing brush	5-3432	heavy duty wet scrubbing
Shampoo brush	5-3433	carpet cleaning
Bassine polishing brush	5-3434	polishing and spray cleaning
Gumati polishing brush	5-3435	polishing and spray cleaning
Standard drive disc *(see note 1)*	5-3436	retains cleaning pads
Flexi-drive disc	5-3437	retains cleaning pads
Solution tank	5-3438	scrubbing/shampooing
Anti-splash water skirt	5-3439	prevents splashing when wet scrubbing
Vacuum unit and hose	5-3440	dust extraction
Vacuum skirt	5-3441	dust extraction
Paper filter bags (10 pack)	2-3526	dust collection

1 - Suitable for 45cm 200 machine only.

IMPORTANT : Genuine accessories are only available from authorised Service Agents or Truvox Customer Services Dept.

11 Fault diagnosis

The following simple checks may be performed by the operator.

Trouble	Reason	Remedy
Machine not working, neon indicator not lit.	Lack of voltage/electrical supply.	Check fuse *, supply cord, plug and socket outlet.
Machine not working, neon indicator lit.	Switch interlock incorrectly operated. Motor overload cut-out operated.	Check operating procedure in instructions. Check brush/pad for good condition. Check correct liquid type & quantity. Check liquid dilution. Allow motor to cool.
Vacuum unit not working, neon indicator lit.	Motor overload cut-out operated.	Replace filter bag. Clear blocked hoses / connectors.
Machine wobbles or vibrates excessively.	Brush/pad worn or damaged. Pad not centered on drive disc. Pad dirty.	Renew brush/pad. Place pad in correct position. Clean the pad.

* If the fuse blows several times, the machine should be checked by an authorised Service Agent.